

Amendment and Response  
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Amendment to the Claims:

Please amend the claims to read as follows:

- 1 1. (previously presented) A system comprising:
  - 2 a charge-emission device having an emitter;
  - 3 a controllable current source electrically connected to the emitter
  - 4 of the charge-emission device by an electrical path, the controllable
  - 5 current source supplying to the emitter of the charge-emission device
  - 6 over the electrical path a controlled amount of electrical current that
  - 7 produces a potential difference at the emitter with respect to an electrode
  - 8 to induce the emitter to emit electrical charge; and
  - 9 a current sink connected to the controllable current source for
  - 10 shunting at least a portion of the electrical current to ground upon a
  - 11 detection of a particular charge emission condition.
- 1 2. (canceled)
- 1 3. (previously presented) The system of claim 1, further comprising
- 2 protection circuitry for detecting the particular charge emission condition
- 3 and for activating the current sink upon the detection.
- 1 4. (previously presented) The system of claim 1, wherein the particular
- 2 charge emission condition is indicative of an excessive flow of current
- 3 from the emitter.
- 1 5. (previously presented) The system of claim 1, wherein the particular
- 2 charge emission condition is indicative of an excessive rate of change of
- 3 the current flowing from the emitter.

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- 1 6. (original) The system of claim 1, wherein the current source is
- 2       adjustable to enable changes to an amount of electrical current being
- 3       supplied by the controllable current source to the emitter.
- 1 7. (original) The system of claim 1, further comprising a controller
- 2       directing the controllable current source to provide a predetermined
- 3       amount of electrical current.
- 1 8. (original) The system of claim 1, wherein the charge-emission device is
- 2       a device that emits ions.
- 1 9. (original) The system of claim 8, wherein the emitted ions have a
- 2       positive charge.
- 1 10. (original) The system of claim 1, wherein the charge-emission device is
- 2       a device that emits electrons.
- 1 11. (original) The system of claim 1, wherein the charge-emission device
- 2       emits fluid.
- 1 12. (original) The system of claim 1, wherein the charge-emission device is
- 2       a gated device.
- 1 13. (original) The system of claim 1, wherein the charge-emission device
- 2       has an array of emitters including the emitter and a second emitter, and
- 3       the controllable current source provides current to each emitter in the
- 4       emitter array.
- 1 14. (original) The system of claim 1, wherein the controllable current
- 2       source is a first current source, the charge-emission device has an array
- 3       of emitters including a first emitter and a second emitter, and further

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4 comprising a second controllable current source, the first current source  
5 supplying a first controlled amount of electrical current to the first  
6 emitter and the second current source supplying a second controlled  
7 amount of current to the second emitter.

1 15. (currently amended) A system comprising:  
2           a micro-fabricated charge-emission device having an emitter;  
3           controllable means for supplying to the emitter of the charge-  
4           emission device a controlled amount of electrical current that produces a  
5           potential difference at the emitter with respect to an electrode to induce  
6           the emitter to emit electrical charge; and  
7           means, electrically connected to an electrical path between the  
8           supplying means and the emitter, for shunting at least a portion of the  
9           supplied electrical current to ground upon a detection of a particular  
10          charge emission condition.

1 16. (original) The system of claim 15, further comprising means for  
2           signaling the supplying means to supply the controlled amount of  
3           electrical current.

1 17. (original) The system of claim 15, further comprising means for  
2           adjusting the controlled amount of electrical current supplied to the  
3           emitter.

1 18. (canceled)

1 19. (original) The system of claim 15, further comprising means for  
2           detecting a particular charge emission condition.

1 20. (previously presented) A method of controlling an amount of charge  
2           emitted by a charge-emission device, the method comprising:

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- 3           supplying a controlled amount of current from a controllable  
4         current source to an emitter of a charge-emission device over an  
5         electrical path;
- 6           emitting charge from the emitter of the charge-emission device in  
7         response to the current received from the controllable current source;  
8         and
- 9           shunting the current supplied by the controlled current source to  
10      ground upon a detection of a particular charge emission condition.
- 1   21. (original) The method of claim 20, further comprising adjusting the  
2         amount of electrical current supplied to the emitter by the controlled  
3         current source.
- 1   22. (canceled).
- 1   23. (previously presented) The method of claim 20, wherein shunting the  
2         supplied current includes detecting an excessive rate of change in an  
3         amount of charge being emitted by the emitter.
- 1   24. (previously presented) The method of claim 20, wherein shunting the  
2         supplied electrical current includes detecting an excessive amount of  
3         charge being emitted by the emitter.
- 1   25. (previously presented) A system comprising:  
2           a charge-emission device having an emitter and a gate electrode;  
3         and  
4           a controllable current source electrically connected to the emitter  
5         of the charge-emission device by an electrical path over which the  
6         controllable current source supplies a controlled amount of electrical  
7         current to the emitter, the supplied amount of electrical current

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- 8       producing a voltage difference between the emitter and the gate electrode  
9       of a magnitude sufficient to cause the emitter to emit electrical charge  
10      without having to use a voltage supply to apply a voltage bias to the gate  
11      electrode in order to achieve the voltage difference that causes emission  
12      of the electrical charge.
- 1     26. (previously presented) The system of claim 25, wherein the charge-  
2       emission device is micro-fabricated and the gate electrode is integrated  
3       with the emitter in a micro-fabricated structure.
- 1     27. (previously presented) The system of claim 25, further comprising  
2       means for signaling the current source to supply the controlled amount  
3       of electrical current.
- 1     28. (previously presented) The system of claim 25, further comprising  
2       means for adjusting the controlled amount of electrical current supplied  
3       to the emitter.
- 1     29. (previously presented) The system of claim 25, further comprising a  
2       current sink connected to the controllable current source for shunting at  
3       least a portion of the electrical current to ground upon a detection of a  
4       particular charge emission condition.
- 1     30. (previously presented) The system of claim 29, further comprising  
2       protection circuitry for detecting the particular charge emission condition  
3       and for activating the current sink upon the detection.
- 1     31. (previously presented) The system of claim 29, wherein the particular  
2       charge emission condition is indicative of an excessive flow of current  
3       from the emitter.

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- 1 32. (previously presented) The system of claim 25, wherein the charge-  
2 emission device has an array of emitters including the emitter and a  
3 second emitter, and the controllable current source provides current to  
4 each emitter in the emitter array.
- 1 33. (previously presented) The system of claim 25, wherein the controllable  
2 current source is a first current source, the charge-emission device has  
3 an array of emitters including a first emitter and a second emitter, and  
4 further comprising a second controllable current source, the first current  
5 source supplying a first controlled amount of electrical current to the  
6 first emitter and the second current source supplying a second controlled  
7 amount of current to the second emitter.
- 1 34. (previously presented) A method of controlling an amount of charge  
2 emitted by a charge-emission device having an emitter and a gate  
3 electrode, the method comprising:
  - 4 supplying a controlled amount of current from a controllable  
5 current source to the emitter of the charge-emission device over an  
6 electrical path; and
  - 7 producing, by the controlled amount of current, a voltage  
8 difference between the emitter and the gate electrode of a magnitude  
9 sufficient to cause the emitter to emit electrical charge without having to  
10 use a voltage supply to apply a voltage bias to the gate electrode in order  
11 to achieve the voltage difference that causes emission of the electrical  
12 charge.
- 1 35. (previously presented) The method of claim 34, further comprising  
2 adjusting the amount of electrical current supplied to the emitter by the  
3 controlled current source.

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- 1 36. (previously presented). The method of claim 34, further comprising  
2 shunting the current supplied by the controlled current source to ground  
3 upon a detection of a particular charge emission condition.
- 1 37. (previously presented) The method of claim 36, wherein shunting the  
2 supplied current includes detecting an excessive rate of change in an  
3 amount of charge being emitted by the emitter.
- 1 38. (previously presented) The method of claim 36, wherein shunting the  
2 supplied electrical current includes detecting an excessive amount of  
3 charge being emitted by the emitter.